Sustainable Land Management and Climate Change

Options for a Plan of Action

A New Zealand Government Initiative on Sustainability

MAF

Presentation

- Plan of Action fit in broader Climate Change Policy
- Context for Agriculture and Forestry
- Kyoto protocol and what does it mean
- New Zealand's Emissions Picture 2008-12
- Description of the Plan of Action
- Overview of Forestry & Agriculture Options
- Links to other programmes
- Consultation Process

Economy-wide action

Sector	Discussion document/policy
Energy (Non-Transport)	Draft New Zealand Energy Strategy Replacement Energy Efficiency and Conservation Strategy Transitional Measures Broad Measures Post-2012
Transport	Biofuels Vehicle fleet measures Draft New Zealand Energy Strategy Replacement Energy Efficiency and Conservation Strategy Broad Measures Post-2012
Agriculture/Forestry	Sustainable Land Management and Climate Change Permanent Forest Sink Initiative Research – Pastoral Greenhouse Gas Research Consortium (PGGRC) Broad Measures Post-2012

An enduring policy platform

New Zealand Energy Strategy to 2050
(Replacement Energy Efficiency
and Conservation Strategy)

Transitional Measures (Electricity & Stationary Energy)

Sustainable Land Management & Climate Change

Broad Measures Post-2012

2007 2010 2012

Context for Plan of Action

- New Zealand is highly exposed to climate change (environmentally and economically)
- Almost every country now accepts climate change is happening and must be addressed (e.g. California, Eastern US states, NSW, China, Kyoto ratified states, more than 300 U.S. cities)
- Trade risks are becoming a reality. “Food miles” “Wood miles”, “border taxes”, “carbon neutral marketing”
- In this environment, New Zealand must be seen to play its part
- Agriculture and Forestry critical to NZ economy. Must also compete on international market
- With the international focus on climate change there are real business opportunities

Climate change in New Zealand

- Increasing frequency of severe climatic events – droughts, floods, storms, wind
- Wetter in west, drier in east
- Sea-level rise
- Increased risk of forest fires
- Changing growing seasons and regions
  - e.g. kiwifruit

- In New Zealand:
  - Drought costs in 1997/98 estimated at $1 billion
  - Lower North Island floods in 2004 estimated at over $300 million

Kyoto Protocol

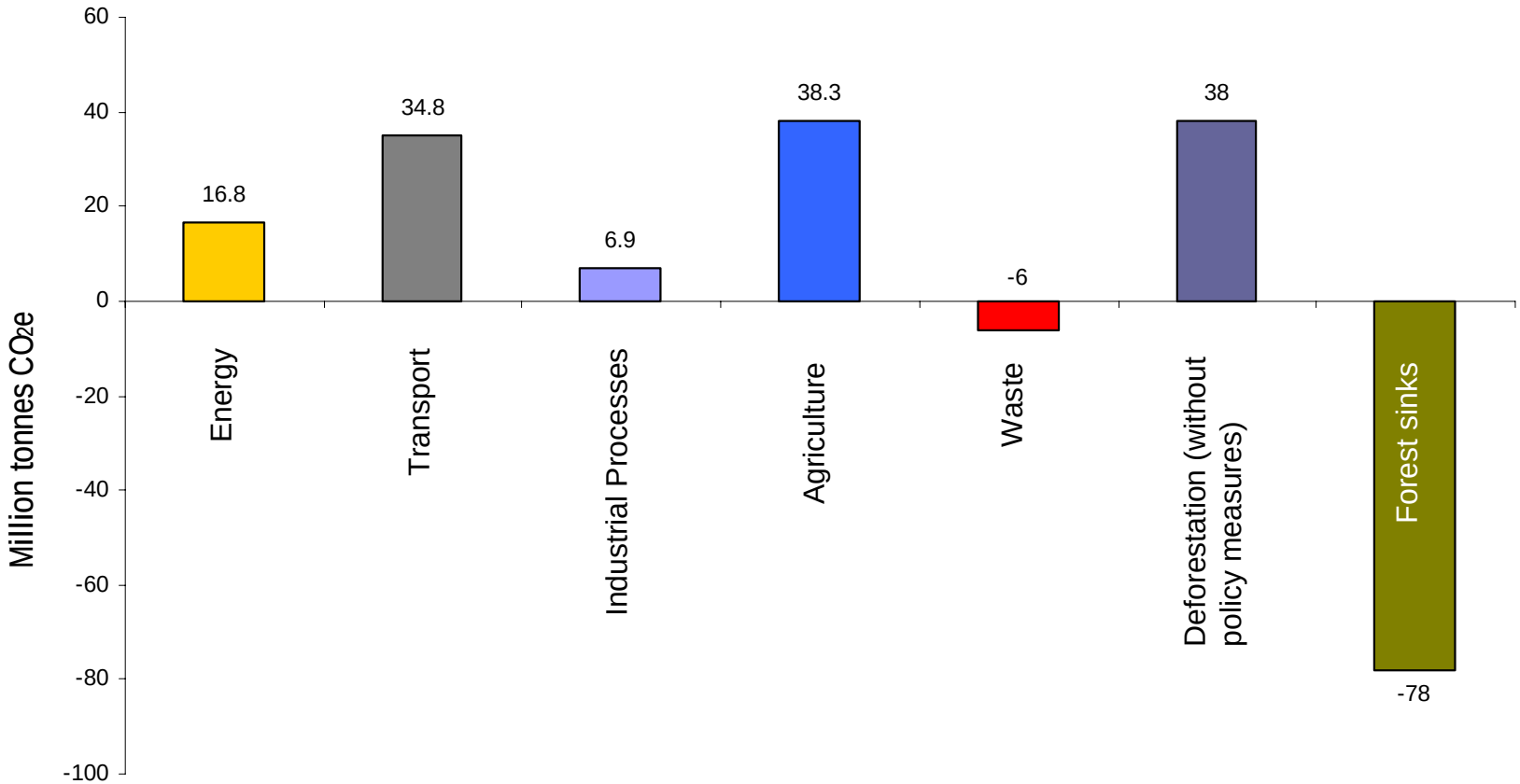
- The Kyoto Protocol commits countries to individual, legally-binding targets to limit or reduce their greenhouse gas emissions.
- 165 countries have ratified the Protocol to date.
- 35 countries and the EEC are required to reduce greenhouse gas emissions below levels specified for each of them in the Protocol.
- New Zealand's target is to cut greenhouse-gas emissions to our 1990 levels over the commitment period 2008-2012 or take responsibility for any excess.

Rules of the game

Kyoto rules put simply:

- Deforestation (changing land use) of pre-1990 forests = **emission liabilities**
- Harvesting and replanting of pre-1990 forest = **no emission liability**
- Afforestation of post-1990 forest = **emission sink**
- Excess emissions from agriculture above 1990 levels = **emission liabilities**

Projected excess emissions from key sectors over the first five-year Commitment Period of the Kyoto Protocol



Plan of Action

- Government wants a single Plan of Action covering climate change and the land management sectors (agriculture, horticulture and forestry)

- Climate change measures are a key component of sustainable land management – many actions will be mutually supportive

- It is proposed that the Plan of Action will comprise 4 'Pillars'
  - Pillar 1: Adapting to Climate Change
  - Pillar 2: Reducing Emissions and Enhancing Sinks
  - Pillar 3: Capitalising on Business Opportunities
  - Pillar 4: Working Together

Pillar 1: Adapting to Climate Change

- Issues include: more frequent and intense drought; more frequent and intense storms (flooding, erosion, infrastructure); pressure on ecosystems (including aquatic); biosecurity risks; market issues.

- Responses include: research; information dissemination and training; improved planning; infrastructure (e.g. flood works, water storage, irrigation); forest establishment and catchment management

- Expect this to be highly collaborative with industry

Pillar 3: Business opportunities

- Many opportunities including: bioenergy, technologies to reduce methane and nitrous oxide; low energy systems and products (biomaterials); renewable energy; carbon farming; advisory services; marketing initiatives

- Response could include: identifying specific initiatives (e.g. PFSI); identifying barriers; creating markets; resourcing research and development; promoting and raising public awareness; considering role of regulation and procurement policies

- Expect to be highly collaborative – recognising commercial and funding issues

Pillar 4: Working together

- Government wants durable and constructive relationships
- Up to sectors to choose if and how they want to engage
- Some areas highly collaborative, others led by Government (already noted)
- One key issue is sharing information and collaborating with:
  - Other government programmes that will affect climate change policies or be affected by climate change policies
  - Other sector-led initiatives
- Other key areas for collaboration include: developing and negotiating post-2012 frameworks; and strategic advice on climate change issues

Overview of possible forestry options

AFFORESTATION OPTIONS	DEFORESTATION OPTIONS	
Incentives	**Price-based measures**	**Regulation**
Afforestation Grants Scheme (AGS) Invite growers wanting to establish new post-2007 forests to tender for afforestation grants	**Flat charge option** Impose flat deforestation charge	**RMA options** Use RMA to control deforestation
Choice between AGS and devolution of sinks & liabilities Give each grower the choice to receive the relevant sink credits and liabilities or seek a grant under the AGS	**Tradable permit regime** Government allocates tradable deforestation permits; forest owners who deforest are liable for emissions above the level of permits they hold	**Centrally determine deforestation levels option** Pass new legislation to limit rates of deforestation

Overview of possible options for reducing agricultural emissions

LONG-TERM OPTIONS

Research, Technology Transfer and Voluntary Reporting

1. Research
Research into adaptation and mitigation and measurement technologies and practices for methane and nitrous oxide

2. Technology transfer
Use of demonstration farms to promote adoption of mitigation technologies e.g. nitrogen inhibitors, nutrient budgeting, improved forage crops

3. Voluntary reporting
Voluntary reporting of emissions at the farm level

OPTIONS FOR ENCOURAGING EMISSIONS REDUCTIONS NOW

Price Based Measures

Government Pricing Mechanisms

4. Incentives
Pay a financial incentive to encourage the use of nitrogen inhibitors

5. Charge on nitrogen fertiliser
Impose a charge on nitrogen fertilisers

Market-based Mechanisms

6. Tradable permit regime for agriculture emissions
Devolution of agriculture greenhouse gas emission obligations and permits to farmers

7. Offset schemes
Farmers required to offset emissions by emission reductions elsewhere i.e. tree planting, biofuels etc

Regulation

8. RMA standards to control agricultural greenhouse gas emissions
Development of a National Environmental Standard to specifically control agricultural greenhouse gas emissions: i.e. input and/or output controls

Options focusing on land use change from forestry to agriculture

10. Flat charge where deforested land is used for agriculture
Impose a charge on agriculture emissions created when land is converted from forestry to agriculture

9. RMA standards to control land use change
Controlling the greenhouse gas emissions and other effects arising from land use change from forestry to agriculture

Links to other programmes

- Sustainable Water Programme of Action
  - Reducing nitrate loss will reduce nitrous oxide emissions
  - Water use efficiency and planning will assist adaptation
- Water Enhancement Policy
  - Considering enhancement schemes which would enhance adaptation to drought
- Adverse Events Policy
  - Reduce vulnerability to adverse climatic events
- Flood Risk Management Review
  - Reduce impacts of flood events
- Sustainable Land Management Programme
  - Catchment management, erosion reduction, resilient farming systems
- East Coast Forestry Project
  - Afforestation on erosion-prone land in the Gisborne District

Consultation process

- Launch December 18 - available on the web www.maf.govt.nz/climatechange
- 0800 CLIMATE (0800 254 628)
- Consultation roadshows February/March 2007
- Public feedback by 30 March 2007
- Report back on consultation April 2007
- Consideration of preferred policy package Autumn 2007